

## **Preparing for Test #3 (Revised)**

Thursday, December 1

Approximate coverage: pp. 233-325

- Exact binomial inference
  - Confidence intervals
  - Tests of  $\pi$
- Structure of tests
  - Null, alternative hypotheses
  - Test statistic
  - p-value
  - Test decision
  - Type I and Type II error, power
- Duality of tests and confidence intervals
- Sampling from finite population
  - Hypergeometric distribution
  - Binomial approximation, conditions for validity
- Probability densities as models
  - Conditions for a function to be a density
  - Probability as area or integral
  - Computing mean and median from a density
- Normal distribution
  - Curve sketching
  - Mean, standard deviation
  - Empirical rule
  - Calculations—probability from value(s), value from probability
- Sampling distribution of the sample proportion
  - Simulation
  - Normal approximation to binomial (CLT for the sample proportion)
  - Necessary conditions
- Effect of constant multiplier on mean and standard deviation
- Binomial inference by means of normal approximation
  - Z-test
  - Confidence interval based on Z